

SPIRITUALITY, PHYSICAL ACTIVITY, AND LIFE SATISFACTION 1

THE RELATIONSHIP BETWEEN SPIRITUALITY, PHYSICAL ACTIVITY, AND LIFE
SATISFACTION IN AFRICAN AMERICAN COLLEGE STUDENTS

BY

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Abstract

The present study seeks to investigate levels of both spirituality and physical activity and the effect of this interaction has on life satisfaction among African American college students. The study was conducted using an on-line survey. In the study participants were presented with questions from the following measures: the Spiritual Well-Being Scale (Paloutzian & Ellison, 1982), the Physical Activity Subscale of the Health Promoting Lifestyle Profile (Walker, Sechrist, & Pender, 1987), and Students' Life Satisfaction Scale (Huebner, 1991). The three scales were randomized so that they appeared in different orders for each participant. After completing the scales, participants were presented with demographic questions (age, classification, institution, and racial/ ethnic background). It was hypothesized that African American students with high levels of spirituality coupled with high levels of physical activity will also have high levels of life satisfaction. A correlational analysis of the data showed that spirituality was negatively correlated with life satisfaction and there was a positively trending significance between physical activity and life satisfaction. Regression analysis further showed that spirituality and the interaction between spirituality and physical activity were negatively significant predictors of life satisfaction. The results of this study may have implications for social programming on college campuses in regards to physical activity and spirituality and provide guidance for young African Americans seeking to maintain a healthy lifestyle.

Table of Contents

I. Introduction	
A. Topic and Content	4
B. Review of Relevant Literature	6
1. Spirituality in the African American Community	
2. Positive Outcomes of Spirituality in College Students	
3. Physical Activity and Health Outcomes in the African American Community	
4. Physical Activity and Weight Gain in College Students	
5. Importance of Life Satisfaction	
C. Present Study	15
II. Methodology	
A. Participants	16
B. Measures	17
C. Procedure	17
D. Design	18
E. Data Reduction	18
III. Results	
A. Preliminary Analyses: Descriptive Statistics	21
B. The Relationship between Spirituality, Physical Activity, and Life Satisfaction	21
C. Spirituality, Physical Activity, and the Interaction of these Factors as Predictors of Life Satisfaction	23
IV. Discussion	25
Acknowledgements	27
References	28
Appendices	30

The African American community has a history of exerting influence and strength when there is a need to band together for change. Religion and spirituality have been two factors in effecting change in the African American community (Lewis, 2008). Religiosity involves participation in church services and traditions and spirituality involves communion with and having a personal relationship with a higher power (Taylor & Chatters, 2010). The deeply rooted value of spirituality in the African American community has been sustained through slavery, the Civil Rights Movement, and the election of Barack Obama (Lewis, 2008). Spirituality has always been a key part of the African American Community (Lewis, 2008). The spiritual beliefs of African Americans are one of the important factors that helped them to live through and survive the times of slavery (Lewis, 2008). Spiritual connectivity was the foundation of the Civil Rights Movement. The church, whether that is the Christian church or an Islamic mosque, has been a central part of the African American community, with spirituality being a value cherished by the African American community. This high level of spirituality has provided many African Americans with the foundation for a fulfilling life.

Despite African Americans being highly spiritual as a group (Taylor & Chatters, 2010) and the many benefits of having strong levels of spirituality (Cooper, Brown, Vu, Ford, & Powe, 2001), the African American community has been labeled as a “special needs population” because of the widespread lack of physical activity and associated high levels of chronic illnesses (Pittman, 2003). African Americans are afflicted with high rates of many diseases, but that rate could be lessened with the introduction of regular physical activity. African Americans have a disproportionate number of cases of high blood pressure, diabetes, and heart disease (Pittman, 2003), which affects the strength and prosperity of the African American community.

Establishing a value on physical activity in the African American community would increase the health of its members and likely result in higher levels of life satisfaction.

In addition to African Americans, college students could also have many positive outcomes with increased spirituality and physical activity. When leaving home to attend college, some students turn to their religious and spiritual beliefs to keep them grounded in their new environment. Many positive outcomes have been found in association with spirituality in college students. College students with high levels of spirituality were found to have higher rates of participation in physical activity (Nelms, Hutchins, Hutchins, & Pursley, 2007) and lower occurrences of negative health behaviors, such as drinking, caffeine consumption, (Nagel & Sgoutas-Emch, 2007). Nelms et al. (2007) also found that there was a positive relationship between a college students' spirituality and their life satisfaction.

One challenging area for many college students is incorporating physical activity into their new lifestyle. When students are preparing for college they are often warned to try to avoid the "freshmen fifteen". Although most college freshman do not gain fifteen pounds within their first year, college students do gain twice as much as the average American young adult during their first year at an institution of higher learning (Holm-Denoma, Joiner, Vohs, & Heatherton, 2008). Holm-Denoma et al. (2008) found that both male and female college students gained a significant amount of weight by the November of their freshman year of college. If college students begin to establish positive health lifestyles that incorporate physical activity, they will be better equip to combat chronic health conditions and diseases throughout adulthood (Pittman, 2003).

The present study seeks to investigate levels of spirituality and physical activity among African American college students and the effect of this interaction has on life satisfaction. It

was hypothesized that African American students with high levels of spirituality coupled with high levels of physical activity will also have high levels of life satisfaction. The study was conducted using an on-line survey. The results of this study may have implications for social programming on college campuses in regards to physical activity and spirituality and provide guidance for young African Americans seeking to maintain a healthy lifestyle.

Review of Relevant Literature

The following literature review will discuss spirituality in the African American community, positive outcomes of spirituality in college students, physical activity and health outcomes in the African American community, physical activity and weight gain in college students, and the importance of life satisfaction.

Spirituality in the African American Community

Researchers have found that religion and spirituality have been important factors in the African American community. For example, Taylor & Chatters (2010) sought to determine whether there was a significant difference between the self-reported importance of religion and spirituality in the daily lives of African Americans, Caribbean Blacks, and non-Hispanic Whites. The researchers conducted face to face interviews for 3,570 African American, 1,621 Caribbean Blacks, and 891 non-Hispanic Whites. Participants were asked to indicate whether religiosity or spirituality were important in their lives, and to what degree (i.e. very important, fairly important, not important at all), as well as whether both religiosity and spirituality were both important factors in their lives. Participants were also asked demographic questions, such as, age, gender, marital status, education, family income, region, and religious affiliation. Over 40 religious affiliations were reported and then coded as Baptists, Methodists, Pentecostal, Catholic, Other Protestant, Other Religions, or None. This study found that 93% of their African American

participants indicated that both religion and spirituality were important to their daily lives compared to 74.4% among non-Hispanic White participants (Taylor & Chatters, 2010).

Both religion and spirituality are important to African Americans, but spirituality alone has been found to have many benefits in the African American community (Cooper, Brown, Vu, Ford, & Powe, 2001). Spirituality has been identified as an important factor in the treatment of health conditions in African Americans compared to other races. Cooper et al. (2001) investigated the factors that influence depression care in African American and White patients. This study included 76 participants between the ages of 18 and 64 with a mean age of 34.8 years. Thirty-six percent of the participants were African American and 64% were White. Participants were administered the Center for Epidemiologic Studies Depression Scale as well as the Structured Clinical Interview for DSM III-R before participating in this study to determine the severity of their depression. Participants were then given a 126-item questionnaire in which they were instructed to rate each item based on its importance to their treatment for depression from *1-Not at all* to *5-extremely important*. This study found that African American and White patients generally rated similar items as important, but African Americans were 3 times more likely to rate spirituality as “extremely important” compared to their White counterparts. This study suggests that the importance of spirituality in the African American community is significantly greater than its importance in other racial groups (Cooper et al., 2001).

Positive Outcomes of Spirituality in College Students

Current research on spirituality in college students examines both spirituality and religiousness as one unit. In Kane and Jacobs' (2010) study, the researchers sought to determine what aspects of spirituality were important for college students. Participants indicated that their spirituality was vital to their success and coping strategies while in college. The study included

204 participants with a mean age of 27.1 years with 70.6% of the participants being female.

Participants were given a survey with questions determining their frequency of prayer/meditation, attendance at religious/spiritual services, religious identification, and justification of spiritual practices. Using a regression model, this study determined that communing with a supreme being, overcoming problems and maintaining health with spirituality/religion, accommodating religious/spiritual values into one's life, frequency of prayer/meditation, external signs of religious observance, and attendance of religious/spiritual services predicted how important spirituality and religion were to helping college students deal with the challenges of this stage of life (Kane and Jacobs, 2010). Although these findings examine both religiousness and spirituality, they provide evidence that certain spiritual practices help to predict college students' use of religious beliefs and spirituality to combat difficulties in college.

Kneipp, Kelly, and Cyphers (2009) examined whether religiosity and spirituality have a positive effect on adjustment to college. In this study, being religious and being spiritual were not grouped together and considered two different variables. Religiousness takes into account the more traditional, going to a church, and praying. Spirituality considers self-growth and emotional self-fulfillment. The researchers hypothesized that spirituality would have a greater positive impact than religiosity on college adjustment. The study included 233 participants, of which 135 were female, with a mean age 21.3 years. Participants were given the Religiousness Measure/Demographics Questionnaire, the Spiritual Well Being Scale, and the Student Adaptation to College Questionnaire. The findings of this study found that both religiousness and spirituality influenced college adjustment, but that spirituality was a stronger predictor of college adjustment (Kneipp, Kelly, & Cyphers, 2009). This study provides evidence for the

benefit of spirituality in college students and supports the further investigation of spirituality rather than continuing to combine spirituality and religiousness as a singular variable.

Spirituality in college students has also been examined in relation to overall health and health behaviors. Nagel & Sgoutas-Emch's (2007) study included 364 college students, 81% of which were female. Nagel & Sgoutas-Emch (2007) administered a background questionnaire, the Index of Core Spiritual Experiences, the Health Promoting Lifestyles Profile, and the Health Beliefs Questionnaire I and II to determine if there was a relationship between spirituality and health beliefs and behaviors. This study found that spirituality was positively correlated to positive health behaviors, such as exercise, and negatively correlated to negative health behaviors, such as alcohol and caffeine consumption (Nagel & Sgoutas-Emch, 2007).

Nelms et al. (2007) conducted a similar study to Nagel & Sgoutas-Emch (2007) to determine if high levels of spirituality predicted better health in college students. Their study used the Spirituality Scale and the College Student Appraisal of Risks Survey to assess the spirituality and health of their 221 participants. Nelms et al. (2007) found that spirituality and self-reported health is positively related in college students. Nelms et al. (2007) also found a positive relationship between spirituality and physical activity as well as a positive relationship between spirituality and life satisfaction.

Research on spirituality in college students has also sought to study factors that are related to spirituality such as service-mindedness and the possible connection between spirituality and life satisfaction. The purpose of Pashak and Laughter's (2012) study was to create a reliable and valid measure for service-mindedness and to determine if service-mindedness is a mediating variable between spirituality and life satisfaction. This study included 133 participants between the ages of 18 to 24 with a mean age of 19.03 years old. Participants

were given the Service-Mindedness Scale, the Spiritual Involvement and Belief Scale, and the Satisfaction with Life Survey. Pashak and Laughter (2012) found that the Service-Mindedness Scale they created was both reliable and valid. The researchers also found that spirituality significantly predicts service-mindedness and life satisfaction and that service mindedness accounted for the link between spirituality and life satisfaction (Pashak & Laughter, 2012).

Physical Activity and Health Outcomes in the African American Community

African Americans are often at higher health risks for many chronic illnesses such as heart disease, diabetes, and high blood pressure. The high occurrence of these illnesses in the African American community has been linked to insufficient levels of physical activity (Pittman, 2003). In a 1996 report, the Surgeon General named African Americans a “special needs population” due to their lack of adequate physical activity. Based on this negative view of African Americans in regards to their physical activity, Pittman (2003) was prompted to investigate whether there are cultural differences that would explain the lower levels of physical activity in the African American population.

Through research and interviews, Pittman (2003) found that there were significantly fewer African Americans in exercise science professions, which he inferred would result in little to no advocacy of physical activity in the African American community. This study included fourteen women ranging in age from 19-80 years old. The participants were students, employees, or alumni of a predominantly White university (Pittman, 2003). Participants believed that dance was a physical activity that is important to African American culture, but is not necessarily looked at as an activity used to promote health. Pittman’s (2003) study also found that the collective nature of the African American community could create a lot of stress, particularly on the women of the community. Pittman (2003) concluded that African American

community and family involvement could take the focus away from individual health because African Americans are too focused on supporting the community. This study begins to explore ways to promote physical activity for health related reasons by using a physical activity that is already present in the African American community, dance. This study also begins to look at stress and pressure of being a caregiver as not only an additional contributor to poor health, but also a barrier to regular physical activity.

Bennett et al. (2006) also investigated attitudes about what it means to be overweight, exercise, and health among African Americans through a randomized telephone survey. Participants were asked demographic questions, their perceived weight (underweight, average, overweight), and questions about their physical activity. The study included 986 African American participants, 46.3% were males and 53.7% were females, between the ages of 18 and 90 years old with a mean age of 42.33 years old. Sixty-five percent of the participants indicated an average perceived weight with 84.5% of participants reporting that they were physically active in the past month. More than half of the participants (53%) believed that it was possible to be overweight and healthy and 84% of participants believed that exercise was vital to having a healthy lifestyle (Bennett et al., 2006).

The results of this study highlight several issues in the African American community regarding physical activity. Although research has found that 63% of African American men and 77% of African American women are overweight or obese, 65% of these participants perceived themselves to be an average weight (Bennett et al., 2006). This find suggest that many African Americans are not aware of what is considered an average weight. Participants also believed that it is possible to be overweight and be healthy. If participants are not aware of an average weight, then their perceived overweight range is probably in the obese range and is

associated with even more health risks than individuals in the overweight range. Investigating the attitudes of African Americans about body weight and health can lead to knowledge of major areas of possible support to increase physical activity and familiarity with average weight ranges and other important characteristics of good health.

Physical Activity and Weight Gain in College Students

The “Freshman Fifteen” is a common phrase used to warn students that the first year of their undergraduate career may be associated with a major weight gain. Holm-Denoma, Joiner, Vohs, and Heatherton’s (2008) research explored whether the “freshman fifteen” is simply a myth and has provided reasons for why this weight gain may occur. This study included 924 participants, of which 472 were females and 452 were males. Participants were recruited as high school seniors planning to begin college the next academic year. To assess their health and well being, surveys were administered to participants once their senior year of high school and three times over the course of their freshman year of college. Participants were administered the Health and Eating Patterns Research Questionnaire, Eating Disorders Inventory, the State Self-Esteem Scale, and the Revised Restraint Scale. Participants were also asked to self-report their weight. The results of this study found that there was a significant weight gain in the first year of college compared to national averages. This weight gain was attributed to many factors including decline in physical activity and participation in sports, relationships with parents, and change of the type of food consumed (Holm-Denoma et al. 2012).

In addition to physical activity combating weight gain, physical activity can also be a tool used to moderate stress. Brown’s (1991) research investigates whether physical fitness serves as a buffer for stress and makes individuals able to deal with life’s stressors in a healthier way. This study included 110 undergraduate students, of which 37 were males and 73 were females.

This researcher hypothesized that individuals who are fit perceive lower levels of life stress. The study included several self-reported surveys to determine physical activity, life stress, illness, psychological distress, and self-esteem. The researchers also accessed the participants' health center records and heart rates during exercise. The results of this study indicate that college students with high levels of physical activity are less vulnerable to the negative effects of life stress (Brown, 1991).

Brown (1991) established that college students would benefit from physical activity, but there are challenges to incorporating physical activity into the lives of college students. In order to explore ways to integrate physical activity onto college campuses, physical activity first had to be examined regarding attitudes and behavior. Rosen (2000) investigates two aspects of exercise: whether attitudes towards exercise affect the levels of processing information about exercise and whether baseline behavior and intent to exercise has an effect on resulting physical activity. This study included 147 undergraduate students, of which 99 were female and 48 were male. Participants were assessed using the Stages of Exercise Behavior Questionnaire, the 7-Day Physical Activity Recall Questionnaire, as well as by an experiment testing the reaction to messages regarding exercise that sought to determine exercise related thoughts based on the message. The researcher found that when participants had a neutral or mildly negative attitude towards exercise, they were less aware of messages related to exercise. Rosen (2000) also found that participants who did not exercise regularly but had a positive attitude towards exercise "experienced dissonance between their exercise ideals and current inactivity". Participants believed that exercise would have positive results, but did not exercise regularly. The results of this study also found that positive intent to exercise and occasional exercise at the baseline was associated with higher levels of future physical activity (Rosen, 2000).

Importance of Life Satisfaction

When taking into account major spiritual, religious, or philosophical ideologies, fulfillment and self-actualization are, generally speaking, the goals of all individuals. Maslow's Hierarchy of Needs is one of those theories that suggest that humans work through five levels of needs (Hagerty, 1999). The levels are as follows: physiological, which includes air, water, food, etc.; safety, which involves feeling protected from assault, murder, and chaos; belongingness and love, which include family, friends, and community; esteem, which includes possessing status and confidence; and finally the highest level of need, self-actualization. Self-actualization is obtained when an individual fulfills their full potential and utilizes their talents fully. When individuals reach self-actualization or at least feel content with their lives they have high levels of life satisfaction. Life satisfaction is an important goal of human life (Hagerty, 1999). The present study seeks to investigate factors that could possibly influence life satisfaction because of the importance of life satisfaction on the ultimate goals of human beings.

There are many terms that are synonymous with life satisfaction, but the focus of life satisfaction is on feelings of well-being, mental health, and happiness (Huebner, 1991). Research focusing on life satisfaction in students is limited, but Huebner (1991) determined that a scale to measure life satisfaction in students was needed in the psychological field. A scale to measure life satisfaction in students was created by testing the validity of questions from the following instruments: Piers-Harris Self-Concept Scale—Revised (Piers, 1984), the Children's Social Desirability Questionnaire—Short Form (CSD; Crandall and Crandall, 1965), Mood Scale of the Dimensions of Temperament Survey—Revised (DOTS—R; Windle and Lerner, 1986). Many factors contribute to an individual's life satisfaction. An individual's levels of physical activity and spirituality could possibly affect several of these factors.

Present Study

The present research is focused on the interaction between spirituality and physical activity and its effect on life satisfaction in African American college students. Spirituality is an important factor in the daily lives of African Americans (Taylor & Chatters, 2010), while physical activity is a value that has not been developed to a degree in which African Americans are realizing the health benefits of regular physical activity (Pittman, 2003). In college students are given their first experience with independence and making decisions, but do not always have the support needed to meet their needs in the areas of spirituality and physical activity.

According to Pashak and Laughter (2012), "life satisfaction is a broad concept of contentment that incorporates emotive, experiential, cognitive, and social elements across the life-span" p.184. Their study on service-mindedness and its relationship with spirituality found that spirituality predicts both service-mindedness and life satisfaction. Maher et al. (2012) found that daily physical activity was associated with higher levels of life satisfaction. Although the Pashak and Laughter (2012) and Maher et al. (2012) established a positive connection between spirituality and life satisfaction as well as physical activity and life satisfaction, there has been limited research on the importance of the link between spirituality and physical activity and the interaction of these two factors and in predicting life satisfaction.

Relatedly, college students have been shown to have positive outcomes from high levels of spirituality, such as less negative health behaviors (Nagel & Sgoutas-Emch, 2007), higher levels of physical activity (Nelms et al., 2007), and higher levels of life satisfaction (Nelms et al., 2007), but limited research has been conducted on the outcomes of a interaction of higher levels of spirituality and physical activity. There has also been limited research on the interaction of

spirituality and physical activity in the African American college student population in respect to life satisfaction.

In the present study it is hypothesized that spirituality would be a positive predictor life satisfaction and physical activity would positively predict life satisfaction, but that a high interaction between spirituality and physical activity would predict the highest level of life satisfaction in African American college students.

Method

Participants

Participants in this study included 216 students, between the ages of 17 and 23, attending an all-women's historically black college in the southern United States. All students volunteered to participate in this study and qualified to enter into a raffle for a \$75.00 VISA Gift Card.

Measures

Spirituality. The Spiritual Well-Being Scale (Paloutzian & Ellison, 1982) was used to determine a spirituality score for each participant. It is a 20-item measure with questions on personal experiences with spirituality (i.e., "I believe that God loves me and cares about me" which were rated on a Likert scale ranging from SA = Strongly Agree to SD = Strongly Disagree). Reliability coefficients were determined based on religious affiliations. The alpha coefficient for reliability for Catholics, Protestants, Jewish, and non-traditional religions were .93, .91, .76, and .88 respectively (Genia, 2001).

Physical Activity. The Physical Activity Subscale of the Health Promoting Lifestyle Profile (Walker, Sechrist, & Pender, 1987) was used to determine the physical activity score for participants. This measure is an 18-item subscale that asks participants to indicate their involvement in specific physical activities (i.e., take part in leisure-time physical activities) on a

4-point Likert scale ranging from 1=*Never* to 4=*Routinely*. The Health Promoting Lifestyle Profile was found to have a high level of internal consistency with alpha coefficient of .943 for the total scale with subscale alpha coefficients ranging from .793 to .872. This scale also has a high reliability of .892 for the total scale.

Life Satisfaction. The Students' Life Satisfaction Scale (Huebner, 1991) was used to determine the life satisfaction score for participants. This measure is a 7-item scale that asked participants to rate different aspects of their lives (i.e., "Life is great") on a 7-point Likert scale ranging from 1= *Strongly Disagree* to 7= *Strongly Agree*. The Students' Life Satisfaction Scale was found to have a high reliability with a .82 alpha coefficient, a high internal consistency with a .84 alpha coefficient, and 0.5 validity.

Procedure

Participants were recruited via email and asked if they would like to participate in the study. At such time each participant was provided with a secure link to the survey and asked to complete it on their own time. The survey was administered through the Qualtrics online survey software. The Qualtrics system is secured and does not record any personal information. Upon beginning the survey, participants were presented with the informed consent. Participants were then presented with questions from the following measures: the Spiritual Well-Being Scale (Paloutzian & Ellison, 1982), the Physical Activity Subscale of the Health Promoting Lifestyle Profile (Walker, Sechrist, & Pender, 1987), and Students' Life Satisfaction Scale (Huebner, 1991). The three scales were randomized so that they appeared in different orders for each participant. After completing the scales, participants were presented with demographic questions (age, classification, institution, and racial/ ethnic background).

At the end of the survey, participants were presented with a message debriefing them on the nature of the research and providing them the researchers contact information for further information on the results of the study. Participants were then provided a code that will not be associated with their responses, and asked to email the code to the researcher in order to be entered into a drawing for a \$75.00 VISA Gift Card.

The researcher sent a campus wide e-mail identifying the winner of the \$75.00 VISA Gift Card by providing the code they were given at the conclusion of their survey. Once the study was concluded the researcher used the results of the surveys to establish a composite score for each participant for spiritual well being, physical activity, and life satisfaction.

Design

This study was a correlational survey design. The data were analyzed using a multiple linear regression. The predictor variables are the scores the participants receive for spirituality and physical activity based on the Spiritual Well-Being Scale (Paloutzian & Ellison) and the International Physical Activity Questionnaire (IPAQ). The outcome variable was the score the participants receive for life satisfaction based on the Students' Life Satisfaction Scale (Huebner, 1991).

Data Reduction

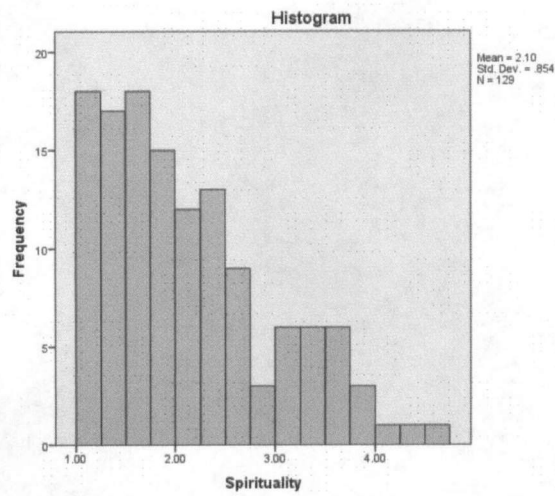
After the survey was closed to potential participants, the results from Qualtrics were exported into a Microsoft Excel document. Each questions was then renamed using a two to three word label compatible with the SPSS predictive analysis software. Original questions were maintained in a separate tab for each scale. In the tab for each scale, questions that needed to be recoded before analysis were identified and marked. Data were then sorted based on whether

participants had completed all scales or skipped one of more scales. Only the data of participants who completed all three scales were used in the analysis.

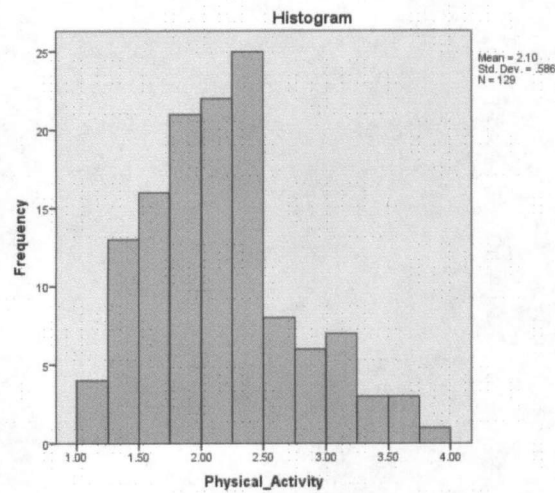
The data to be used in the analysis were then imported into the SPSS software for preliminary data treatment. First, scores for questions that were identified as needing to be recoded were reversed to create a new variable with the same name as the original variable followed by “_Recoded”. A composite score was then computed for spirituality, physical activity, and life satisfaction. The original articles for each of these variables indicated that the composite score must be computed using an average of each response. An interaction term for spirituality and physical activity was then computed by multiplying each participant’s spirituality composite score by their physical activity composite score to create a new interaction term.

The Kolmogorov-Smirnov test for normality was conducted to determine whether the scores for spirituality, physical activity, and life satisfaction were normally distributed. The spirituality scores were positively skewed, $D = .12, p < .001$. Participants were found to have lower levels of spirituality than that of a normal distribution. The physical activity scores were also positively skewed, $D = .10, p < .005$. Participants were found to have lower levels of physical activity than that of a normal distribution. Life satisfaction scores were found to be normally distributed, $D = .06, p = .20$. Scores for spirituality and physical activity were not normalized so that data would not be skewed in relationship to the life satisfaction scores, which were already normally distributed. Distributions can be found in Graphs 1, 2, and 3.

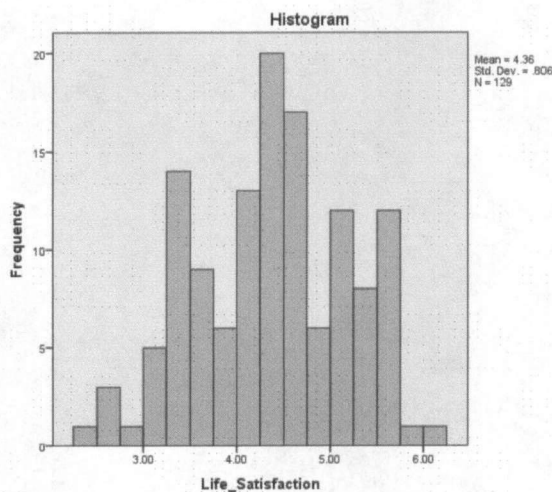
Graph 1: Spirituality Scores Distribution Graph



Graph 2: Physical Activity Scores Distribution Graph



Graph 3: Life Satisfaction Scores Distribution Graph



Results

Preliminary Analyses: Descriptive Statistics

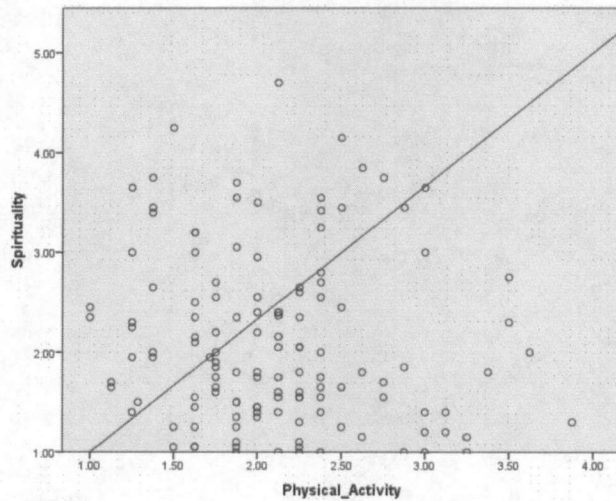
Descriptive statistics for spirituality, physical activity, and life satisfaction were calculated prior to analysis. Spirituality was measured on a 6-point Likert scale and the mean spirituality score for the sample was 2.10 (SD = .85). Physical activity was measured on a 4-point Likert scale and the mean physical activity score for the sample was 2.10 (SD = .59). Life satisfaction was measured on a 6-point Likert scale and the mean life satisfaction score for the sample was 4.36 (SD = .81). The interaction between spirituality and physical activity was calculated and had a mean of 4.36 (SD = 2.14) for the sample.

The Relationship between Spirituality, Physical Activity, and Life Satisfaction

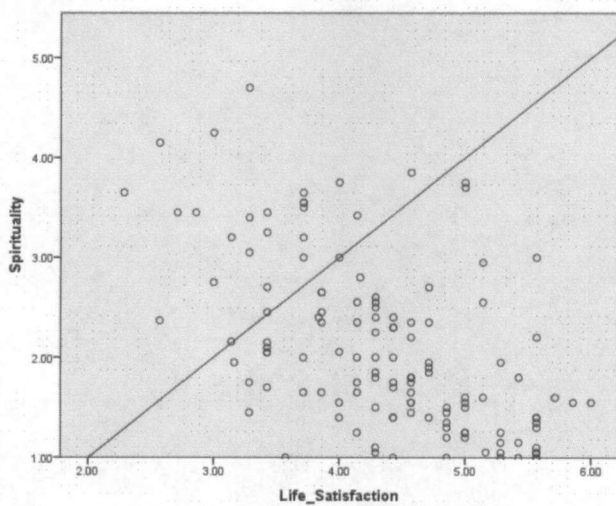
A Pearson's correlation was used to analyze correlations between each variable. There was not a significant correlation between spirituality and physical activity, $r(127) = -.11, p = .23$. There was a significant negative correlation between spirituality and life satisfaction, $r(127) = -.57, p < .001$. As levels of spirituality increased, life satisfaction levels decreased. There was a positively trending significance between physical activity and life satisfaction, $r(127) = .18, p = .04$. As levels

of physical activity increased, life satisfaction increased. These results are displayed in Graphs 4, 5, and 6.

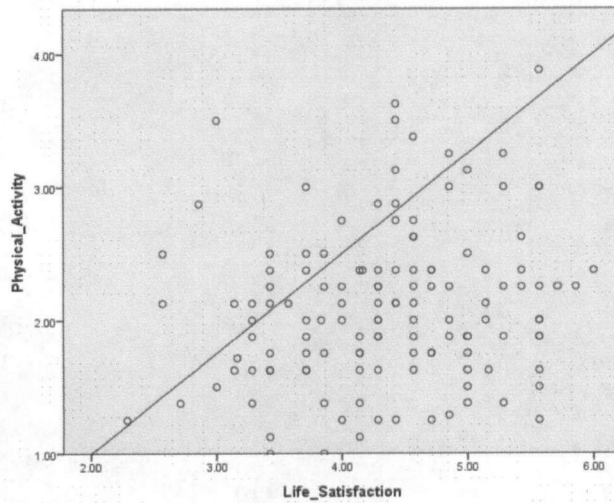
Graph 4: Scatter Plot of Correlation between Spirituality and Physical Activity



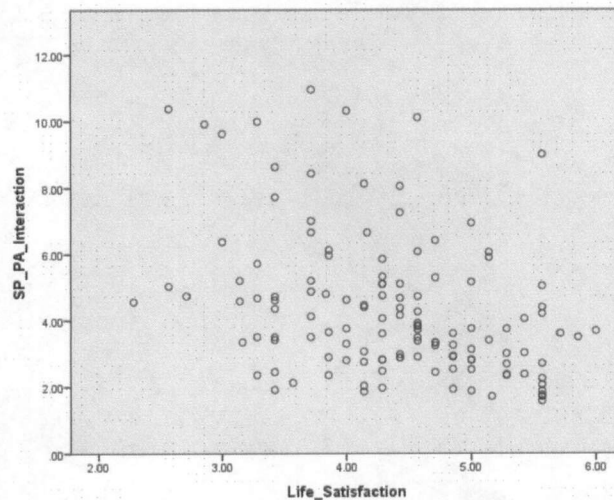
Graph 5: Scatter Plot of Correlation between Spirituality and Life Satisfaction



Graph 6: Scatter Plot of Correlation between Physical Activity and Life Satisfaction



Graph 7: Scatter Plot of Correlation Between the Interaction Term and Life Satisfaction



Spirituality, Physical Activity, and the Interaction of these Factors as Predictors of Life Satisfaction

A regression analysis was conducted with spirituality, physical activity, and the interaction between spirituality and physical activity as the predictor variable and life satisfaction as the outcome variable. Spirituality was a negatively significant predictor of life satisfaction, $\beta = -.52$, $t(128) = -7.63$, $p < .001$. As levels of spirituality increased, life satisfaction decreased. Physical

activity was not a significant predictor of life satisfaction, $\beta = .17$, $t(128) = 1.67$, $p = .10$. The interaction between spirituality and physical activity was a negatively significant predictor of life satisfaction, $\beta = -.14$, $t(128) = -4.63$, $p < .001$. As the interaction between spirituality and physical activity increased, life satisfaction decreased. These results are displayed in Table 1 and 2.

Table 1: Regression Analysis between Spirituality, Physical Activity, and Life Satisfaction

Model	Unstandardized Coefficients		Standardized Coefficients	<i>t</i>	Sig.
	β	Std. Error	Beta		
(Constant)	5.11	.27		18.63	.00
Spirituality	-.52	.07	-.56	-7.63	.00
Physical Activity	.17	.10	.12	1.67	.10

Dependent Variable: Life Satisfaction

Table 2: Regression Analysis between the Interaction between Spirituality and Physical Activity and Life Satisfaction

Model	Unstandardized Coefficients		Standardized Coefficients	<i>t</i>	Sig.
	β	Std. Error	Beta		
(Constant)	4.98	.15		33.16	.00
Interaction between Spirituality and Physical Activity	-.14	.03	-.38	4.63	.00

Dependent Variable: Life Satisfaction

Discussion

This study was conducted to explore the relationship between spirituality, physical activity, and life satisfaction in African American college students. The results of this study did not support the research hypothesis that spirituality would be a positive predictor life satisfaction and physical activity would positively predict life satisfaction, but that a high interaction between spirituality and physical activity would predict the highest level of life satisfaction in African American college students.

The results showed that as spirituality increased, levels of life satisfaction decreased. Although physical activity was not found to predict life satisfaction in either direction, the correlation between physical activity and life satisfaction was positively trending. Although the correlation was not significant, results revealed a tendency of increased levels of physical activity being associated with higher levels of life satisfaction, which was consistent with the research hypothesis. The interaction of spirituality and physical activity was found to negatively predict life satisfaction; a higher interaction predicted lower levels of life satisfaction. Spirituality may have been a negative predictor of life satisfaction because people with low levels of life satisfaction turn to spirituality to make their lives better, but they may not have reached their turning point yet. Very spiritual students may also feel isolated or stifled on a college campus, making them less satisfied with their lives.

Previous research found that spirituality and physical activity were each positively correlated with life satisfaction in both African Americans and college students. This study focused on the African American college student population, which incorporated the ideas of multiple previous studies. Assuming that African Americans and college students of other racial/ethnic backgrounds would have similar outcomes as African American college students

may have made too many assumptions. The African American population studied and/or surveyed in previous research may not have shared the same characteristics as the sample of this study due to the age of the sample. Previous research surveyed a large number adults over the age of 20, and the findings of these studies may not be applicable to college aged African Americans. In the same regard, previous research on college students involved college students of varying races or sometimes predominately Caucasian samples, which limited the extent to which the findings can be generalized to African American college students.

One of the limitations of this study is the focus on spirituality instead of including both spirituality and religiosity and examining the difference in the results between the two. This study also could have encompassed more elements of health in addition to physical activity (eating habits, stress management, etc.). Once collecting the data, the normality of spirituality and physical activity became a limitation. There were more participants were found to have low levels of physical activity and spirituality than participants with high levels of physical activity and spirituality. If these scores were normally distributed among participants, that may have altered the results of this study.

Future research on spirituality, physical activity, and life satisfaction may include a religiosity scale in addition to a spirituality scale to determine if religiosity provides a different outcome of life satisfaction, alone or when interacting with physical activity. Furthermore, including more variables of health along with physical activity may provide other correlations between overall health and life satisfaction. Additionally a cross-cultural comparison of college student populations may indicate if the findings are unique to African American college students or whether other racial/ethnic backgrounds have similar outcomes.

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Appendices

INFORMED CONSENT FORM

I am an undergraduate student at Spelman College conducting research on the relationship between spirituality and physical activity and life satisfaction in African American college students. I would appreciate your participation in my study. If you agree to participate, you will be asked to complete an online survey with questions concerning spirituality, physical activity, and life satisfaction, all of which total about 20-30 minutes. There are no known benefits or risks to you. Since your participation is voluntary, you may refuse to answer any questions or withdraw from participation at any time without penalty.

All answers will be confidential, as your name will not be associated with your responses. The online survey is administered on a secure online survey site and does not collect personal or IP addresses. Your informed consent form will be completely separate from your responses and all of your answers will be reported only as group data.

All participants will be given an identification code at after completing their online survey which they will email to the researcher. This information will be used to enter participants into a raffle for a \$75 VISA gift card which will take place after data collection is completed.

If you have any questions pertaining to this study, you may contact Dr. Sandra Sims Patterson at 404-270-5618 or spatters@spelman.edu. If you have questions about your rights as a participant in this study, please contact Dr. Carmen Sidbury, Associate Provost of Research, whose office oversees the protection of human research participants. She may be reached at 404-270-5706 or IRB@spelman.edu.

Thank you for your assistance.

Researcher's Signature

Participant's Signature

Date

_____ I am at least 18 years old.
(Initial)

SWB Scale

For each of the following statements circle the choice that best indicates the extent of your agreement or disagreement as it describes your personal experience:

SA = Strongly Agree

MA = Moderately Agree

A = Agree

D = Disagree

MD = Moderately Disagree

SD = Strongly Disagree

1. I don't find much satisfaction in private prayer with God.
2. I don't know who I am, where I came from, or where I'm going.
3. I believe that God loves me and cares about me.
4. I feel that life is a positive experience.
5. I believe that God is impersonal and not interested in my daily situations.
6. I feel unsettled about my future.
7. I have a personally meaningful relationship with God.
8. I feel very fulfilled and satisfied with life.
9. I don't get much personal strength and support from my God
10. I feel a sense of well being about the direction my life is headed in.
11. I believe that God is concerned about my problems.
12. I don't enjoy much about life.
13. I don't have a personally satisfying relationship with God.
14. I feel good about my future.
15. My relationship with God helps me not to feel lonely.

SPIRITUALITY, PHYSICAL ACTIVITY, AND LIFE SATISFACTION

32

16. I feel that life is full of conflict and unhappiness.
17. I feel most fulfilled when I'm in close communion with God.
18. Life doesn't have much meaning.
19. My relation with God contributes to my sense of well being.
20. I believe there is some real purpose for my life.

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LIFESTYLE PROFILE II

DIRECTIONS: This questionnaire contains statements about your present way of life or personal habits.

Please respond to each item as accurately as possible, and try not to skip any item. Indicate with which you engage in each behavior by circling:

N for never, S for sometimes, O for often, or R for routinely

1. Discuss my problems and concerns with people close to me.
2. Choose a diet low in fat, saturated fat, and cholesterol.
3. Report any unusual signs or symptoms to a physician or other health professional.
4. Follow a planned exercise program.
5. Get enough sleep.
6. Feel I am growing and changing in positive ways.
7. Praise other people easily for their achievements.
8. Limit use of sugars and food containing sugar (sweets).
9. Read or watch TV programs about improving health.
10. Exercise vigorously for 20 or more minutes at least three times a week (such as brisk walking, bicycling, aerobic dancing, using a stair climber).
11. Take some time for relaxation each day.
12. Believe that my life has purpose.
13. Maintain meaningful and fulfilling relationships with others.
14. Eat 6-11 servings of bread, cereal, rice and pasta each day.
15. Question health professionals in order to understand their instructions.
16. Take part in light to moderate physical activity (such as sustained walking 30-40 minutes 5 or more times a week).
17. Accept those things in my life which I can not change.
18. Look forward to the future.
19. Spend time with close friends.
20. Eat 2-4 servings of fruit each day.
21. Get a second opinion when I question my health care provider's advice.
22. Take part in leisure-time (recreational) physical activities (such as swimming, dancing, bicycling).
23. Concentrate on pleasant thoughts at bedtime.
24. Feel content and at peace with myself.
25. Find it easy to show concern, love and warmth to others.
26. Eat 3-5 servings of vegetables each day.
27. Discuss my health concerns with health professionals.
28. Do stretching exercises at least 3 times per week.
29. Use specific methods to control my stress.
30. Work toward long-term goals in my life.
31. Touch and am touched by people I care about.
32. Eat 2-3 servings of milk, yogurt or cheese each day.
33. Inspect my body at least monthly for physical changes/danger signs.
34. Get exercise during usual daily activities (such as walking during lunch, using stairs instead of elevators, parking car away from destination and walking).

35. Balance time between work and play.
36. Find each day interesting and challenging.
37. Find ways to meet my needs for intimacy.
38. Eat only 2-3 servings from the meat, poultry, fish, dried beans, eggs, and nuts group each day.
39. Ask for information from health professionals about how to take good care of myself.
40. Check my pulse rate when exercising.
41. Practice relaxation or meditation for 15-20 minutes daily.
42. Am aware of what is important to me in life.
43. Get support from a network of caring people.
44. Read labels to identify nutrients, fats, and sodium content in packaged food.
45. Attend educational programs on personal health care.
46. Reach my target heart rate when exercising.
47. Pace myself to prevent tiredness.
48. Feel connected with some force greater than myself.
49. Settle conflicts with others through discussion and compromise.
50. Eat breakfast.
51. Seek guidance or counseling when necessary.
52. Expose myself to new experiences and challenges.

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Students' Life Satisfaction Scale (Huebner, 1991)

Directions: We would like to know what thoughts about life you have had during the past several weeks. Think about how you spend each day and night and then think about how your life has been during most of this time. Here are some questions that ask you to indicate your satisfaction with your overall life. Circle the words next to each statement that indicate the extent to which you agree or disagree with each statement. For example, if you Strongly Agree with the statement "Life is great," you would circle those words on the following sample item;

Life is great.

Strongly	Moderately	Mildly	Mildly	Moderately	Strongly
Disagree	Disagree	Disagree	Agree	Agree	Agree

It is important to know what you REALLY think, so please answer the questions the way you really think, not how you should think. This is NOT a test. There are NO right or wrong answers.

1. My life is going well.
2. My life is just right.
3. I would like to change many things in my life.
4. I wish I had a different kind of life.
5. I have a good life.
6. I have what I want in life.
7. My life is better than most kids.

Huebner, E. S. (1991). Initial development of the Students' Life Satisfaction Scale. *School Psychology International*, 12, 231-243.